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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,352	07/30/2003	David M. Theobald	72255/32775	3469

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EXAMINER

HARTMANN II, KENNETH R

ART UNIT	PAPER NUMBER
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2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/631,352

Applicant(s)

THEOBOLD ET AL.

Examiner

Kenneth R. Hartmann

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/30/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/03/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Detailed Action

Specification

1. The disclosure is objected to because of the following informalities: Fig. 2 is never specifically named and referred to, though the elements are referred to in the specification. It is recommended that the specification also note in which drawing a given element can be found, for example, "fitness measure subsystem 22."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. For example, applicant claims the building of a "database of control vectors" in claim 7, however, only briefly mentions this limitation in the specification, and therefore, one skilled in the art would not be able to make and use the invention without undue experimentation. A similar problem exists with claims 8-11.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-6, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Cromer et al (US 2004/0001467).

For claim 1, Cromer et al. disclose a wireless local area network comprising: a plurality of wireless access points (102 and 106) each having a predetermined coverage area (104, 108, 112, 116); a plurality of wireless clients for establishing a wireless link with at least one wireless access point, wherein at least a portion of wireless clients are within the respective coverage areas of at least a portion of wireless access points (client 1 or 2, 124 or 122, see Fig. 1); a load balancer for balancing distribution of wireless clients among wireless access points comprising (load balancing mechanism, see paragraph 11, lines 15-17); a tracking implementation for tracking at least one telemetry parameter characteristic of each wireless client's wireless link with each respective wireless access point (signal strength and aggregate bandwidth, see Fig. 5 and paragraph 38); a goal implementation (compared against a threshold value, paragraph 41, line 14) for comparing the at least one telemetry parameter (aggregate

Art Unit: 2616

bandwidth, see paragraph 41, lines 13-14) against at least one predetermined goal to obtain a fitness measure (paragraph 41, lines 9-14); a control implementation (see Fig. 7) for varying the operation of at least one of the respective wireless access points and wireless clients in response to the fitness measure, so as to balance the distribution of wireless clients among the respective wireless access points (client redistribution is managed on each access point or in a master station, in order for aggregate bandwidth to be distributed, see paragraphs 42 and 44 and Fig. 8).

For claim 2, Cromer et al. disclose a wireless local area network as disclosed above wherein the tracking implementation (aggregate bandwidth) and goal implementation (predetermined threshold) are part of a "fitness measure" subsystem of the load balancer (see paragraph 41, lines 9-22).

For claim 3, Cromer et al. disclose a wireless local area network as disclosed above wherein the at least one telemetry parameter characteristic of each wireless link is at least one of a signal metric and a data transfer property of the wireless link selected from a group including: packet error rate; signal strength; channel; rate; and processor performance (signal strength, average bandwidth, and aggregate bandwidth, see paragraph 38, lines 9-19).

For claim 4, Cromer et al. disclose a wireless local area network as disclosed above wherein, the at least one predetermined goal (predetermined threshold for aggregate bandwidth, see paragraph 38, lines 13-18) is for at least one of optimizing load distribution and data throughput for each wireless link, and is selected from a group including: achieving equal wireless load distribution on each wireless access point;

Art Unit: 2616

achieving best obtainable received signal strength for each client-to-AP wireless link; achieving best obtainable link quality to minimize "multipath," signal interference, packet loss; providing best obtainable signal quality at a best obtainable data transfer rate; and providing a low packet error rate (access points negotiate with each other to redistribute the client load in order to improve quality of service, see paragraph 14, lines 7-13).

For claim 5, Cromer et al. disclose a wireless local area network as disclosed above wherein, the at least one predetermined goal is for providing balanced AP digital processing performance (aggregate bandwidth is used to redistribute the load among other access points to ensure that there is available bandwidth for clients, see paragraph 14, lines 7-18), and is selected from a group including: providing adequate CPU processing cycles; providing adequate memory capacity; and providing adequate uplink network capacity (overlap in cells to increase data capacity, see paragraph 12, lines 1-7).

For claim 6, Cromer et al. disclose a wireless local area network as disclosed above wherein the control implementation includes at least one control mechanism to vary the operation of at least one of the wireless access points and the wireless clients (forced roaming, see paragraph 14, lines 11-14), wherein the at least one control mechanism is selected from a group including: a WLAN client admission control (preference list exists to specify allowable access points to which the client can attach, see paragraph 34, lines 16-20); a mechanism for varying the signal power of at least one of the clients and the access points; a mechanism for changing at least one of the data rate, coding, and modulation of the wireless signal (client device is modified so that

Art Unit: 2616

it would periodically send out normalized signal strength, see paragraph 39, lines 11-12); and a mechanism for varying the packet length and other controllable protocol characteristics (controller performs MAC functions that process data according to the protocols set forth in IEEE 802.11, see paragraph 35, lines 17-20).

For claim 12, Cromer et al. disclose a wireless local area network as disclosed above wherein the load balancer includes an implementation whereby it can modify the fitness measure definition, so as to achieve any desired or practical load distribution or to adapt to variations in network demand or other changing performance factors (threshold value determined by a network administrator to account for network activity, thus the fitness measure would be changed, see paragraph 41, lines 18-22).

For claim 13, Cromer et al. disclose a wireless local area network as disclosed above wherein the load balancer is implemented on at least one: of software; a discrete unit located on one of a centralized component on the network and within at least one access point; and a functional process distributed among at least some of the access points (code for client redistribution can be executed on each access point or in a single master access point for the entire system or on a server in the network, see paragraph 42, lines 1-6).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim et al. (US 7,054,275) is cited to show a method of load balancing between access terminals where if the load share of an access terminal is greater than a threshold, then the access terminal would reduce its rate.

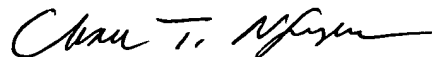
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth R. Hartmann whose telephone number is 571-270-1414. The examiner can normally be reached on Monday - Thursday, 10 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KRH

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